

# We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

**4,800**

Open access books available

**122,000**

International authors and editors

**135M**

Downloads

Our authors are among the

**154**

Countries delivered to

**TOP 1%**

most cited scientists

**12.2%**

Contributors from top 500 universities



**WEB OF SCIENCE™**

Selection of our books indexed in the Book Citation Index  
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?  
Contact [book.department@intechopen.com](mailto:book.department@intechopen.com)

Numbers displayed above are based on latest data collected.

For more information visit [www.intechopen.com](http://www.intechopen.com)



---

## Patient Safety Culture in Tunisia: Defining Challenges and Opportunities

---

Manel Mallouli, Wiem Aouicha,  
Mohamed Ayoub Tlili and Mohamed Ben Dhiab

Additional information is available at the end of the chapter

<http://dx.doi.org/10.5772/intechopen.73155>

---

### Abstract

**Background:** Although adverse events in health care have been a center of attention recently, patient safety culture in primary care is relatively neglected. This study aimed to provide a baseline assessment of patient safety culture in the primary healthcare centers and explore its associated factors.

**Methods:** This is a multicenter cross-sectional descriptive study. It was conducted in the center of Tunisia over a period of 4 months. It surveyed 30 primary healthcare centers, thus 251 staff members. It used the French-validated version of the Hospital Survey on Patient Safety Culture questionnaire.

**Results:** The total number of respondents was 214 participants with a response rate of 85%. The dimension of "teamwork within units" had the highest score (71.47%). Though, three safety dimensions had very low scores, which are "frequency of event reporting," "on-punitive response to errors," and "staffing" with the following percentages 31.43, 35.36, and 38.43%, respectively. As for associated factors, the dimension of "Frequency of reported events" was significantly higher among professionals involved in risk management committees ( $p = 0.01$ ).

**Conclusion:** This study demonstrated that the level of the patient safety culture needs to be improved in primary healthcare centers in Tunisia. As well, the results obtained highlight the necessity of the implementation of quality management system in primary healthcare centers.

**Keywords:** patient safety culture, patient safety, primary care, risk management

---

## 1. Introduction

Adverse events (AEs) still remain as a global challenge and no country has yet overcome all of its patient safety problems [1]. So, many studies have shown the severity of these accidents, in terms of cost, frequency, and serious consequences [2]. The overall incidence of AEs in various high-resource countries varies between 2.9 and 16.6% [1]. The situation is more difficult and serious in low-resource countries with higher risk of patient harm due to the limitation of resources and lack of adequate infrastructures [1, 3]. In Tunisia, a study conducted in Sousse showed that the rate of AEs is 11.3% [1].

As for the area of primary healthcare, which provides the first contact for the patient [2], it goes without saying that quality and patient safety are vital goals and challenges [3]. In fact, errors and AEs are common in the outpatient setting [4, 5]; it has been identified that a significant proportion of safety incidents caught in hospitals had originated in the earlier levels of care [3]. Actually, a study in Spain deemed that 64.3% of AEs in primary care are preventable [5]. As a result, the World Health Organization (WHO) Safety Program has initiated the “Safer Primary Care” project, whose goal is to advance the understanding and knowledge about the risks to patients in primary care and the magnitude of the preventable harm due to unsafe practices in these settings [6].

Furthermore, in order to enhance primary care safety, the National Patient Safety Agency developed a best practice guide that describes how to “build a safety culture” as the first of the seven key steps for primary care organizations to protect the patients they care for [3]. Indeed, the success of any intervention with the ultimate goal of securing care and reducing AEs must go through the development of a patient SC with healthcare workers [4].

Nieva and Sorra defined patient safety culture (PSC) as the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to the style and proficiency of an organization’s safety management [7].

However, undertaking a baseline assessment of PSC of the organization is the first step to start with in building safety culture [3]. Actually, assessing allows healthcare institutions to identify their strengths and weaknesses in terms of patient safety and to provide a clearer view of the aspects that require attention [8, 9].

Several studies found in literature that have been interested to PSC in primary healthcare centers (PHC) and reported variations between countries [2, 3, 9–11]. To our knowledge, there is currently no study that investigated PSC in PHC in Tunisia. We conducted this study to respond to the following research questions: “What is the level of PSC in Tunisian PHCs? And what are the PSC’s associated factors?” Therefore, our objectives were to assess PSC through exploring perceptions and attitudes of professionals in the PHC of the healthcare centers in Sousse (Tunisia) and to determine PSC’s associated factors.

## 2. Methods

### 2.1. Design, settings, duration, and participants

A cross-sectional multicenter study was conducted from January to April 2016 in the PHC in the Tunisian center (Sousse, Kasserine, and Kairouan). These structures were chosen

because they were partners of the Faculty of medicine of Sousse, and therefore, they were responsible for mentoring future family doctors.

All PHC of these listed cities were included in the study ( $n = 30$ ) and all the healthcare providers in them (physicians, healthcare technicians, and nurses) were invited to participate in the study ( $n = 251$ ). Workers who are not involved in healthcare practices and those with less than 1-month experience were excluded.

## 2.2. Measures

The current study used the French version of Hospital Survey of Patients' Safety Culture (HSOPSC) questionnaire, which was translated and validated by the Coordination Committee of the Clinical Evaluation and Quality in Aquitaine (CCCEQA). Internal consistency reliability was of 0.88 for the questionnaire, Cronbach's alpha values varied between 0.46 and 0.84 in 10 dimensions [12].

Ten PSC dimensions were explored by the French version through 45 items. Dimensions were about: overall perception of patient safety (D1), frequency of events reported (D2), supervisor/manager expectations and actions promoting patient safety (D3), organizational learning-continuous improvement (D4), teamwork within units (D5), communication openness (D6), nonpunitive response to error (D7), staffing (D8), management support for patient safety (D9), and teamwork across units (D10). The survey also examined staff perception of patient safety quality (1 item), the number of AEs reported during the last 12 months (1 item), and characteristics of participants (6 items). A Likert scale of five points was used to explore professionals' patient safety culture perception.

## 2.3. Data collection, ethical consideration, and analysis

This study was approved by the common ethics committee of the High School of Sciences and Techniques of Health of Sousse and the university hospitals of Sousse. Administrative authorizations have been obtained from heads, head chiefs, and PHC directors.

A self-reported paper-based questionnaire was distributed to the participants that accepted to take part in the study. The study purposes, outcomes, and instructions were explained to participants. They could freely and anonymously fill in the questionnaire and return their responses directly to the investigator. According to the user guide of the French version of HSOPSC questionnaire, if none of the dimensions' sections was entirely filled, the questionnaire would not be taken into account. Also, if less than half of the items in the questionnaire have been completed, or the same answers were given to all the items, the questionnaire would be illegible and excluded.

## 2.4. Data analysis

The data analysis was conducted using SPSS version 20 and Epi info 6 for windows. Descriptive statistical analysis such as frequencies and percentages of positive responses for each item and dimension were used to examine healthcare professionals' perceptions about PSC. Items were worded in both positive and negative directions. For items with a positive formulation, answers "Strongly Agree/Agree" or "Most of the time/Always" were considered positive. For items with a negative formulation, the answers "Strongly Disagree/Disagree" or "Never/Rarely" responses were considered positive for PSC.

The chi-square test was also used to examine the association between total score of PSC dimensions and participants' demographic and professional variables such as gender, age, professional title/specialty, work experience, region of the PHC, and participation in risk management committees. Statistical significance was defined at  $p \leq 0.05$ .

### 3. Results

#### 3.1. Characteristics of the participants

In total, 214 professionals provided survey feedback (85%). Seventy six (35.5%) participants were general practitioners, 92 (43%) were nurses, and 46 (21.5%) were technicians and midwives. As for gender, the majority of respondents 154 (72%) were female with a sex ratio of 0.39. More than half of the professionals (67.8%) had a work experience of more than 10 years (**Table 1**).

| Characteristics                                      | n   | %    |
|------------------------------------------------------|-----|------|
| <b>Professional title/specialty</b>                  |     |      |
| General practitioners                                | 76  | 35.5 |
| Healthcare technicians                               | 46  | 21.5 |
| Nurses                                               | 92  | 43   |
| Total                                                | 214 | 100  |
| <b>Gender</b>                                        |     |      |
| Females                                              | 154 | 72   |
| Males                                                | 60  | 28   |
| Total                                                | 214 | 100  |
| <b>Age</b>                                           |     |      |
| >40years                                             | 124 | 58.2 |
| ≤40years                                             | 90  | 41.8 |
| Total                                                | 214 | 100  |
| <b>Work experience</b>                               |     |      |
| <10 years                                            | 69  | 32.2 |
| ≥10 years                                            | 145 | 67.8 |
| Total                                                | 214 | 100  |
| <b>Participation into risk management committees</b> |     |      |
| Yes                                                  | 34  | 15.9 |
| No                                                   | 180 | 84.1 |
| Total                                                | 214 | 100  |

| Characteristics                                      | n   | %    |
|------------------------------------------------------|-----|------|
| <b>The district of the primary healthcare center</b> |     |      |
| Urban                                                | 164 | 76.6 |
| Rural                                                | 50  | 23.4 |
| Total                                                | 214 | 100  |

**Table 1.** Characteristics of participants.

### 3.2. The staff perception of patient safety quality and the frequency of reported AEs

Staff perception of patient safety quality in the PHC was ranked as good in 59.3% and poor in 15.9%. Regarding reported AEs, 75.2% of the participants declared that they did not report any event in the last 12 months (**Table 2**).

### 3.3. PSC dimensions

Concerning “overall perception of safety,” it had a score of 52.45%. The percentage of positive responses was the highest for “teamwork within units” (71.47%), so this dimension was a potential area for improvement. The lowest scores were for “frequency of event reporting” (31.43%) and “nonpunitive response to error” (35.36%). Results of all dimensions are shown in **Table 3**.

### 3.4. Factors associated with PSC in PHC

All dimensions of PSC have not been significantly associated with professional title, gender, work experience, the region of the PHC, and participation to a risk committee, except for the

|                                                   | n   | %    |
|---------------------------------------------------|-----|------|
| <b>Staff perception of patient safety quality</b> |     |      |
| Excellent                                         | 12  | 5.6  |
| Very good                                         | 40  | 18.7 |
| Good                                              | 127 | 59.3 |
| Poor                                              | 34  | 15.9 |
| Failing                                           | 1   | 0.5  |
| <b>Number of events reported</b>                  |     |      |
| No event reported                                 | 161 | 75.2 |
| 1–2                                               | 29  | 13.6 |
| 3–5                                               | 9   | 4.2  |
| 6–20                                              | 8   | 3.7  |
| More than 20                                      | 7   | 3.3  |

**Table 2.** Staff perception of patient safety quality and number of reported adverse events during the last 12 months.

| Items of patient safety culture dimensions in the primary healthcare centers                            | Average positive response (%) |
|---------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>D1: Overall perceptions of safety</b>                                                                | <b>52.45</b>                  |
| Patient safety is never sacrificed to get more work done                                                | 61.2                          |
| Our procedures and systems are good at preventing errors from happening                                 | 57                            |
| It is just by chance that more serious mistakes do not happen around here                               | 53.3                          |
| We have patient safety problems in this facility                                                        | 38.3                          |
| <b>D2: Frequency of events reported</b>                                                                 | <b>31.43</b>                  |
| When a mistake is made, but is caught and corrected before affecting the patient, it is reported...     | 33.6                          |
| When a mistake is made, but has no potential to harm the patient, it is reported...                     | 28                            |
| When a mistake is made that could harm the patient, but does not, it is reported...                     | 32.7                          |
| <b>D3: Supervisor/Manager expectations and actions promoting patient safety</b>                         | <b>51.25</b>                  |
| Manager says a good word when he/she sees a job done according to established patient safety procedures | 54.7                          |
| Manager seriously considers staff suggestions for improving patient safety                              | 51.4                          |
| Whenever pressure builds up, my manager wants us to work faster, even if it means taking shortcuts      | 49.1                          |
| My manager overlooks patient safety problems that happen over and over                                  | 49.8                          |
| <b>D4: Organizational learning and continuous improvement</b>                                           | <b>45.01</b>                  |
| We are actively doing things to improve patient safety                                                  | 64.5                          |
| Mistakes have led to positive changes here                                                              | 58.9                          |
| After we make changes to improve patient safety, we evaluate their effectiveness                        | 72                            |
| We are given feedback about changes put into place based on event reports                               | 10.3                          |
| We are informed about errors that happen in the facility                                                | 34.1                          |
| In this facility, we discuss ways to prevent errors from happening again                                | 30.3                          |
| <b>D5: Teamwork within units</b>                                                                        | <b>71.47</b>                  |
| People support one another in this facility                                                             | 68.2                          |
| When a lot of work needs to be done quickly, we work together as a team to get the work done            | 80.8                          |
| In facility, people treat each other with respect                                                       | 70.1                          |
| When one area in this unit gets really busy, others help out                                            | 66.8                          |
| <b>D6: Communication openness</b>                                                                       | <b>44.56</b>                  |
| Staff will freely speak up if they see something that may negatively affect patient care                | 53.3                          |
| Staff feel free to question the decisions or actions of those with more authority                       | 29.9                          |
| Staff are afraid to ask questions when something does not seem right                                    | 50.5                          |
| <b>D7: Non-punitive response to error</b>                                                               | <b>35.36</b>                  |
| Staff feel like their mistakes are held against them                                                    | 34.6                          |

| Items of patient safety culture dimensions in the primary healthcare centers             | Average positive response (%) |
|------------------------------------------------------------------------------------------|-------------------------------|
| When an event is reported, it feels like the person is being written up, not the problem | 42.1                          |
| Staff worry that mistakes they make are kept in their personnel file                     | 29.4                          |
| <b>D8: Staffing</b>                                                                      | <b>38.43</b>                  |
| We have enough staff to handle the workload                                              | 50.5                          |
| Staff in this facility work longer hours than is best for patient care                   | 19.6                          |
| We work in 'crisis mode' trying to do too much, too quickly                              | 40.2                          |
| <b>D9: Management support for patient safety</b>                                         | <b>50.22</b>                  |
| Management provides a work climate that promotes patient safety                          | 47.2                          |
| The actions of management show that patient safety is a top priority                     | 55.1                          |
| Management seems interested in patient safety only after an adverse event happens        | 41.6                          |
| Units work well together to provide the best care for patients                           | 57                            |
| <b>D10: Teamwork across units</b>                                                        | <b>44.23</b>                  |
| There is good cooperation among units that need to work together                         | 49.5                          |
| Units do not coordinate well with each other                                             | 41.6                          |
| It is often unpleasant to work with staff from other units                               | 39.7                          |
| Things 'fall between the cracks' when transferring patients from one unit to another     | 36                            |
| Important patient care information is often lost during shift changes                    | 59.8                          |
| Problems often occur in the exchange of information across units                         | 38.8                          |

**Table 3.** Scores and items of the 10 dimensions of safety culture (n = 214).

dimension of "Frequency of adverse events reported," which was significantly higher among professionals involved in risk management committees ( $p = 0.01$ ).

#### 4. Discussion

Recently, patient safety in primary care has been given increasing attention [12]. Due to the fact that many studies who have investigated the quality of care in primary healthcare settings, have detected a high level of AEs leading to miserable and lethal consequences [14, 15].

Moreover, it is directly accessible to patients and consists of several professions such as general practice, dental care, physiotherapy, and midwifery. Indeed, this study is the first to assess PSC in Tunisian PHC. It was carried out in urban and rural PHC of the listed cities. A high participation rate (85%) (n = 214) was acceptable and run counter to the results from previous studies [13, 14].



The dimension of “overall perception of patient safety” had a score of 52.45%. This reflects the lack of security of care in these PHC and the need to implement corrective measures to increase awareness of this issue among professionals.

Our results reveal that the dimension of “teamwork within units” had the highest score (71.47%) and this statement was similar to what was found in literature [2, 9, 13, 14]. However, it was developed in almost all the studies in PHC [2, 9, 11, 13] and this may be due to the fact that PHC are small buildings with less staff compared to hospitals and an unsophisticated environment, which are the factors that encourage teamwork [15]. Actually, teamwork is known as a dynamic process of healthcare professionals with complementary backgrounds and skills sharing common health goals and exercising concerted efforts in patient care through interdependent collaboration and shared decision-making through open communication, which is critical to teamwork [16].

Concerning the dimension of “communication openness,” it was an area of concern in studies in Kuwait and Turkey [2, 9]. Responses have shown that professionals were not encouraged to express disagreement or to say alternative viewpoints. In a recently published study, only 28% of the staff members dared to speak with their superior regarding their concerns about the risk of a planned measure while the other staff members remained silent. In nearly 90% of the cases, the silence led to a near miss [17–19].

As a matter of fact, openness, in general, is found to be a problem in low-resource countries. Disagreement and criticism against supervisors or team members are frequently interpreted as blame or as a fight against them and may lead to loss of personal relationship or career, so most employees tend to avoid it [3].

According to literature, failures in teamwork and communication lead directly to compromised patient care, staff distress, tension, and inefficiency, make a substantial contribution to medical error [21].

Results of the current study show that all safety culture dimensions are potential areas for the improvement but with prioritization; there are three safety dimensions with very low scores and need to be considered of high priority. These dimensions are “frequency of adverse events reported” (31.43%), “nonpunitive response to errors” (35.36%), and “staffing” (38.43%). These results go hand in hand with several studies [9, 17].

Patient safety is a center of interest in healthcare, internationally, and error reduction can be improved by reporting and learning from errors [22]. A very low positive response for event reporting is expected in primary care because it is known to lack standardized reporting systems and reporting culture [20, 24]. Although primary care may imply lower risks compared to hospitals, the large volume of contacts in this sector suggests that safety incidents can be expected to occur [23].

Also, this underreporting can be explained by the fact that the commission of error is always considered as a lack of skill and rarely seen as a learning opportunity. A number of barriers exist to reporting, including insufficient time to report, lack of feedback, fear of blame, and damage to reputations and patient confidence in a competitive environment [24]. Here, we highlight the dimension of “nonpunitive response to error,” which as mentioned above, has the second lowest score.

These two dimensions appear to be closely related to each other because of the “blame and shame” culture and the punitive environment where failure is punished or concealed and people refuse to acknowledge that problems do exist [9, 13].

Actually, we found that among all participants working in 30 different PHC, 75.2% of them declared that they did not report any event in the last 12 months in their facilities. And it is only normal that in this punitive culture, people will not be willing to report AEs due to the fear of blame and obstruction of any possibility to learn from error.

In this study, the only dimension influenced by one associated factor was “frequency of adverse events reported.” In fact, participants who were engaged in risk management committees had a significant higher score of this dimension (21.81 vs 40.19%,  $p = 0.01$ ). This finding goes hand in hand with results from the PSC survey that was conducted in operating rooms in Tunisia [17].

Actually, risk management describes a dynamic process that includes all measures for systematic identification, analysis, assessment, surveillance, and control of risks. An effective risk management should not start only after the evaluation of an incident but when failure can still be avoided and damage can be prevented. A successful example of effective risk management is the World Health Organization’s safe surgery checklist,” which is the most prevalent example of a standardized information exchange aimed at preventing patient harm due to information deficit [25].

This study provides an overall assessment of safety perceptions among PHC staff. Based on its reflections, we recommend a systematic improvement of staff qualification by providing training opportunities and educational interventions to promote a better understanding of the principles of teamwork, help staff acknowledge each other’s roles and perspectives, and develop effective communication strategies. Moreover, regarding the underreporting, if incident reporting process is perceived as a supportive and formative opportunity, and where protected time is allocated to discuss incidents, then professionals are willing to participate. That is why it is essential to establish a culture where individuals are supported to identify and report errors without threat of punitive action or blame.

Also, we recommend the implementation of continuous training programs concerning risk management and patient safety guides. As well, we find it useful to introduce a medical curriculum safety culture in the educational programs of undergraduate healthcare professionals. Actually in 2011, the WHO published the “Multi-professional Patient Safety Curriculum Guide” with 11 themes related to patient safety to be integrated into healthcare universities [26].

One of the study’s limitations was that the instrument tool used was, actually, developed for use in hospitals setting and not for PHC [16]. The assessment of PSC using a self-administered questionnaire can be associated with a declaration bias. Indeed, self-administered questionnaire may influence the reaction of those who, for fear of reprisal or prosecution, will give social answers that do not reflect reality. Furthermore, HSOPSC does not calculate an overall score of PSC. The validation of such score is complex and raises the problem of choosing the dimensions to be considered and their weightings.

In conclusion, the study findings demonstrate that none of PSC dimensions is developed in our PHC. We highlighted different areas of concern such as “frequency of adverse events reported,” “nonpunitive response to error,” and “staffing.” It also shed the light on the lack of reporting in primary care due to the punitive culture regarding errors.

More attention should be paid to PSC in primary healthcare because changing values and attitudes needs time and motivation through training and improving risk management skills within healthcare providers. Also, as well, the results obtained bring up the necessity of the implementation of quality management system in Tunisian primary healthcare centers.

## Author details

Manel Mallouli<sup>1</sup>, Wiem Aouicha<sup>2\*</sup>, Mohamed Ayoub Tili<sup>2</sup> and Mohamed Ben Dhiab<sup>3</sup>

\*Address all correspondence to: wifi.waouma@gmail.com

1 Department of Community Health – Laboratory of Research LR12ES03, Faculty of Medicine Ibn El Jazzar, “Qualité des soins et management des services de santé maternelle”, University of Sousse, Tunisia

2 Higher School of Health Sciences and Techniques of Sousse, Faculty of Medicine Ibn El Jazzar, Laboratory of Research LR12ES03, “Qualité des soins et management des services de santé maternelle”, University of Sousse, Tunisia

3 Higher School of Health Sciences and Techniques of Sousse, Faculty of Medicine Ibn El Jazzar, University of Sousse, Tunisia

## References

- [1] Bouafia N, Mahjoub M, Cheikh AB, Ezzi O, Jalleb NB, Njah M. Mesure de la culture sécurité des soins auprès des médecins dans un hôpital tunisien. *Santé Publique*. 2014;**26**(3):345-353
- [2] Bodur S, Filiz E. A survey on patient safety culture in primary healthcare services in Turkey. *International Journal for Quality in Health Care*. Oct 1, 2009;**21**(5):348-355
- [3] Webair HH, Al-assani SS, Al-haddad RH, Al-Shaeeb WH, Bin Selm MA, Alyamani AS. Assessment of patient safety culture in primary care setting, Al-Mukala, Yemen. *BMC Family Practice* [Internet]. Dec 2015;**16**(1). [cited May 11, 2017]. Available from: <http://bmcfampract.biomedcentral.com/articles/10.1186/s12875-015-0355-1>
- [4] Gandhi TK, Weingart SN, Borus J, Seger AC, Peterson J, Burdick E, et al. Adverse drug events in ambulatory care. *The New England Journal of Medicine*. 2003;**348**(16):1556-1564
- [5] Aranaz-Andrés JM, Aibar C, Limón R, Mira JJ, Vitaller J, Agra Y, et al. A study of the prevalence of adverse events in primary healthcare in Spain. *European Journal of Public Health*. Nov 29, 2011;**22**(6):921-925
- [6] Safer Primary Care. A global challenge. World Health Organization. 2012;**27**:28TH
- [7] Chen I-C, Li H-H. Measuring patient safety culture in Taiwan using the hospital survey on patient safety culture (HSOPSC). *BMC Health Services Research*. 2010;**10**(1):152

- [8] El-Jardali F, Jaafar M, Dimassi H, Jamal D, Hamdan R. The current state of patient safety culture in Lebanese hospitals: A study at baseline. *International Journal for Quality in Health Care*. Oct 1, 2010;**22**(5):386-395
- [9] Ghobashi MM, El-ragehy HAG, Ibrahim HM, Al-Doseri FA. Assessment of patient safety culture in primary health care settings in Kuwait. *Epidemiology Biostatistics and Public Health* [Internet]. 2014;**11**(3). [cited May 11, 2017]. Available from: <http://ebph.it/article/view/9101>
- [10] Paese F, Sasso G. Cultura da segurança do paciente na atenção primária à saúde [Internet]. *SciELO Brasil*; 2010 [cited May 12, 2017]. Available from: <http://www.scielo.br/pdf/tce/v22n2/v22n2a05>
- [11] Tabrizchi N, Sedaghat M. The first study of patient safety culture in Iranian primary health centers. *Acta Medica Iranica*. 2012;**50**(7):505
- [12] Ocelli P, Quenon J-L, Kret M, Domecq S, Delaperche F, Claverie O, et al. Validation of the French version of the hospital survey on patient safety culture questionnaire. *International Journal for Quality in Health Care*. Sep 1, 2013;**25**(4):459-468
- [13] Verbakel NJ, Zwart DL, Langelaan M, Verheij TJ, Measuring WC. Safety culture in Dutch primary care: Psychometric characteristics of the SCOPE-PC questionnaire. *BMC Health Services Research*. 2013;**13**(1):354
- [14] Sandars J, Esmail A. The frequency and nature of medical error in primary care: Understanding the diversity across studies. *Family Practice*. Jun 2003;**20**(3):231-236
- [15] Patient Reports of Preventable Problems and Harms in Primary Health Care [Internet]. [cited May 16, 2017]. Available from: <http://www.annfammed.org/content/2/4/333.long>
- [16] Mohamed AM, Ali MS, Gewaifel GI. Assessment of patient safety culture in primary healthcare Services in Alexandria, Egypt. *Global Journal of Epidemiology and Public Health*. 2015;**2**:5-14
- [17] Mallouli M, Tili MA, Aouicha W, Ben Rejeb M, Zedini C, Salwa A, et al. Assessing patient safety culture in Tunisian operating rooms: A multicenter study. *International Journal for Quality in Health Care* [Internet]. Jan 9, 2017 [cited May 12, 2017]; Available from: <https://academic.oup.com/intqhc/article-lookup/doi/10.1093/intqhc/mzw157>
- [18] Wilson T, Pringle M, Sheikh A. Promoting patient safety in primary care: Research, action, and leadership are required. *British Medical Journal*. 2001;**323**(7313):583
- [19] Maun A, Engström M, Frantz A, Brämberg EB, Effective TJ. Teamwork in primary health-care through a structured patient-sorting system-a qualitative study on staff members' conceptions. *BMC Family Practice*. 2014;**15**(1):189
- [20] St.Pierre M, Scholler A, Strembski D, Breuer G. Äußern Assistenzärzte und Pflegekräfte sicherheitsrelevante Bedenken?: Simulatorstudie zum Einfluss des "Autoritätsgradienten". *Anaesthesist*. Oct 2012;**61**(10):857-866

- [21] Sutcliffe KM, Lewton E, Rosenthal MM. Communication failures: An insidious contributor to medical mishaps. *Academic Medicine*. 2004;**79**(2):186-194
- [22] Organization WH, et al. World Alliance for Patient Safety: WHO Draft Guidelines for Adverse Event Reporting and Learning Systems: From Information to Action. 2005 [Cited May 12, 2017]. Available from: <http://apps.who.int/iris/bitstream/10665/69797/1/WHO-EIP-SPO-QPS-05.3-eng.pdf>
- [23] Harmsen M, Gaal S, van Dulmen S, de Feijter E, Giesen P, Jacobs A, et al. Patient safety in Dutch primary care: A study protocol. *Implementation Science*. 2010;**5**(1):50
- [24] Rea D, Griffiths S. Patient safety in primary care: Incident reporting and significant event reviews in British general practice. *Health and Social Care in the Community*. Jul 2016;**24**(4):411-419
- [25] Pierre MS. Safe patient care—safety culture and risk management in otorhinolaryngology. *GMS Current Topics in Otorhinolaryngology – Head and Neck Surgery* [Internet]. 2013;**12** [cited May 12, 2017]. Available from: <http://pubmedcentralcanada.ca/pmcc/articles/PMC3884544/>
- [26] WHO. Multi-professional Patient Safety Curriculum Guide [Internet] [cited May 16, 2017]. Available from: <http://www.who.int/patientsafety/education/curriculum/tools-download/en/>